

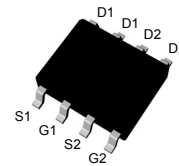
Features

- 40V/-8A
 $R_{DS(ON)}=32m\Omega(typ.)@V_{GS}=-10V$
 $R_{DS(ON)}=45m\Omega(typ.)@V_{GS}=-4.5V$
- 100% UIS + R_g Tested
- Reliable and Rugged
- Lead Free and Green Devices Available
(RoHS Compliant)

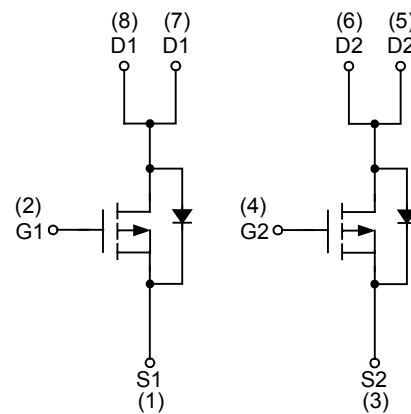
Applications

- Power Management in LCD TV Inverter
- Load Switches
- Motor Control
- Printer Equipment

Pin Description



SOP8



P-Channel MOSFET

Absolute Maximum Ratings (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
Common Ratings				
V _{DSS}	Drain-Source Voltage		-40	V
V _{GSS}	Gate-Source Voltage		±20	
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-55 to 150	
I _S ^b	Diode Continuous Forward Current	T _c =25°C	-8	A
I _D ^b	Continuous Drain Current	T _c =25°C	-8	A
		T _c =70°C	-6	
I _{DM} ^a	Pulsed Drain Current	T _c =25°C	-24	
P _D ^b	Maximum Power Dissipation	T _c =25°C	2.08	W
		T _c =70°C	1.33	
R _{θJA} ^b	Thermal Resistance-Junction to Ambient	t ≤ 10s	60	°C/W
		Steady state	95	°C/W
I _{AS} ^c	Avalanche Current, Single pulse	L=0.1mH	-28	A
E _{AS} ^c	Avalanche Energy, Single pulse	L=0.1mH	39	mJ

Note a : Pulse width limited by max. junction temperature.

Note b : Surface Mounted on 1in² pad area, t≤10s.

Note c : UIS tested and pulse width limited by maximum junction temperature 150°C (initial temperature T=25°C).

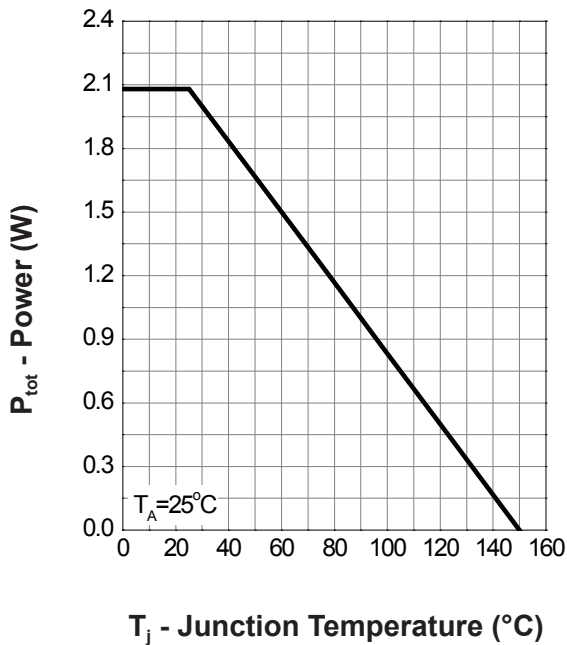
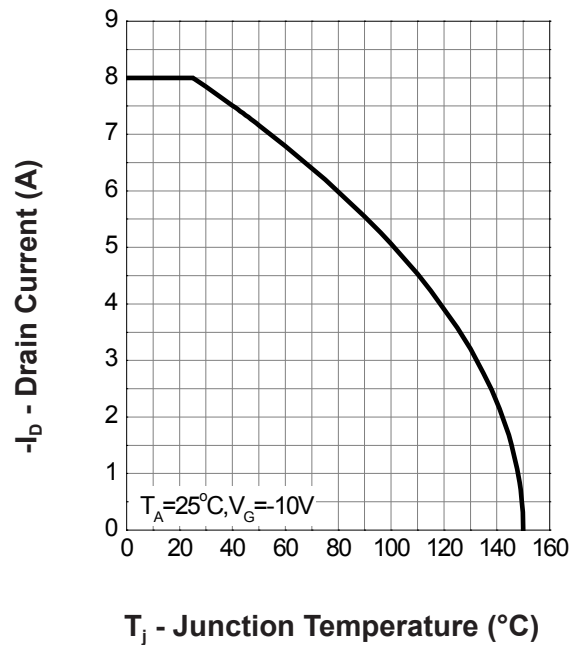
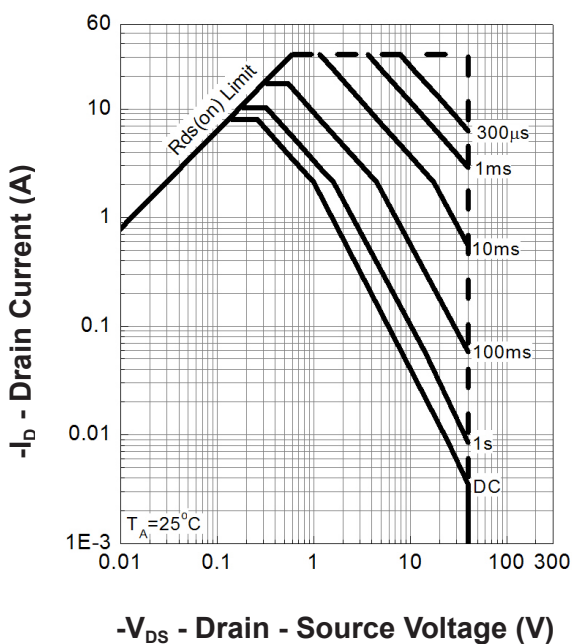
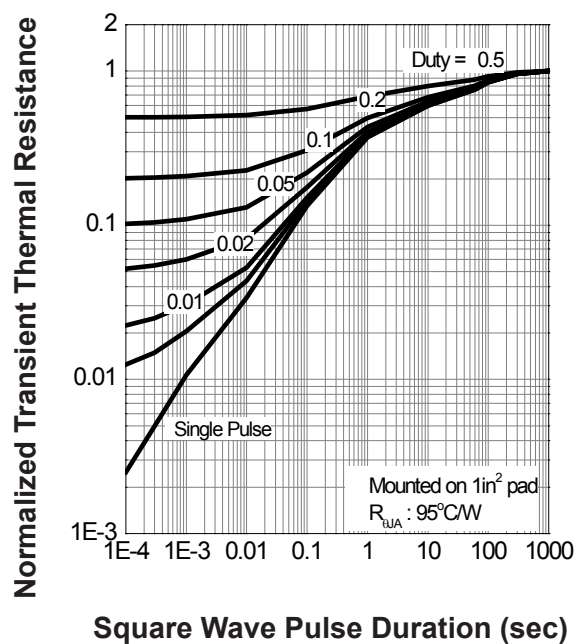
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250μA	-40	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-32V, V _{GS} =0V	-	-	-1	μA
		T _J =85°C	-	-	-30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250μA	-1.4	-1.9	-2.4	V
I _{GSS}	Gate Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)} ^d	Drain-Source On-state Resistance	V _{GS} =-10V, I _{DS} =-6A	-	32	38	mΩ
		V _{GS} =-4.5V, I _{DS} =-4A	-	45	50	
Diode Characteristics						
V _{SD} ^d	Diode Forward Voltage	I _{SD} =-2A, V _{GS} =0V	-	-0.75	-1.1	V
t _{rr}	Reverse Recovery Time	I _{SD} =-6A, dI _{SD} /dt=100A/μs	-	22	-	ns
Q _{rr}	Reverse Recovery Charge		-	16	-	nC
Dynamic Characteristics ^e						
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	3	-	Ω
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-20V, Frequency=1.0MHz	-	1500	1950	pF
C _{oss}	Output Capacitance		-	220	-	
C _{rss}	Reverse Transfer Capacitance		-	145	-	
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-20V, R _L =20Ω, I _{DS} =-1A, V _{GEN} =-10V, R _G =6Ω	-	13	24	ns
t _r	Turn-on Rise Time		-	11	20	
t _{d(OFF)}	Turn-off Delay Time		-	44	80	
t _f	Turn-off Fall Time		-	23	42	
Gate Charge Characteristics ^e						
Q _g	Total Gate Charge	V _{DS} =-20V, V _{GS} =-4.5V, I _{DS} =-6A	-	16.3	-	nC
Q _g	Total Gate Charge	V _{DS} =-20V, V _{GS} =-10V, I _{DS} =-6A	-	32	45	
Q _{gs}	Gate-Source Charge		-	5.2	-	
Q _{gd}	Gate-Drain Charge		-	7.6	-	

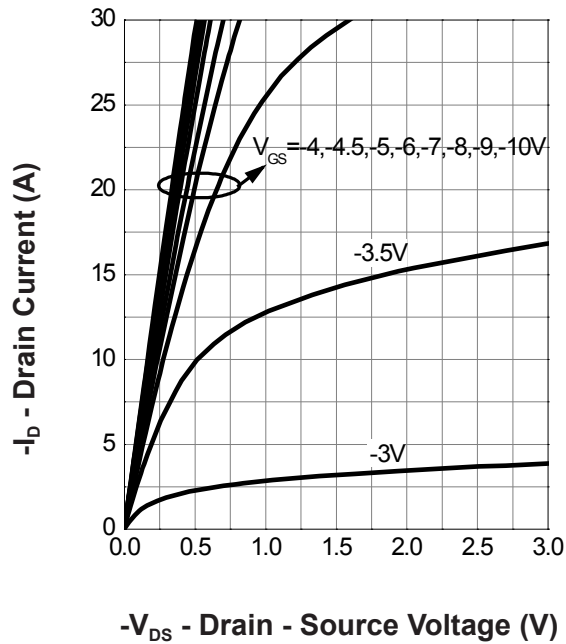
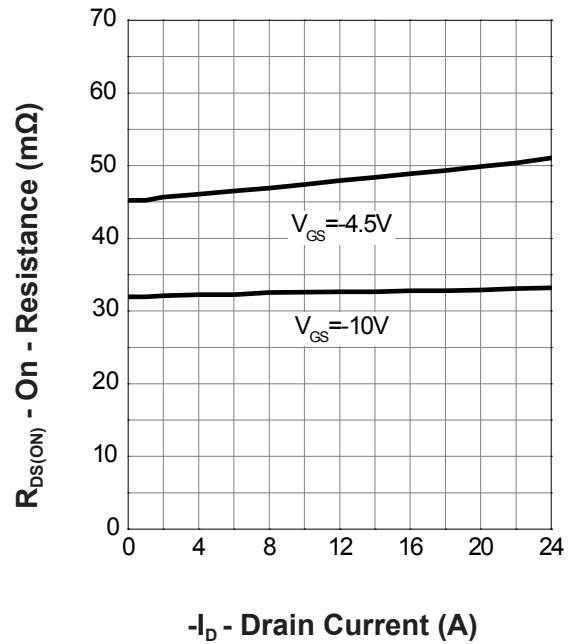
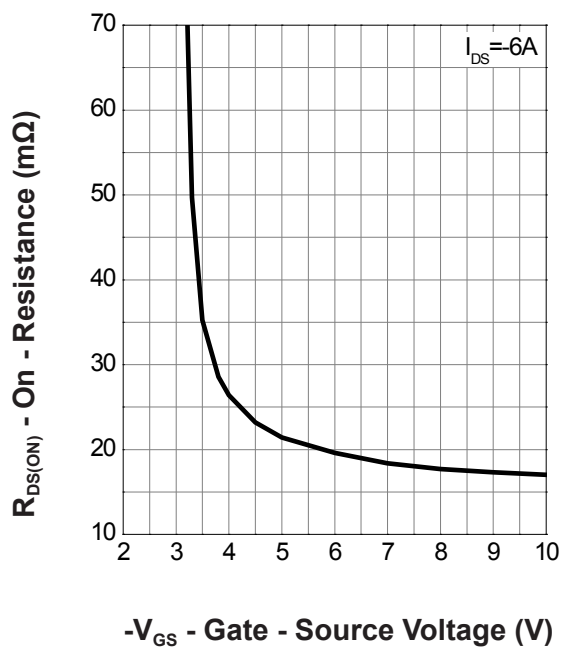
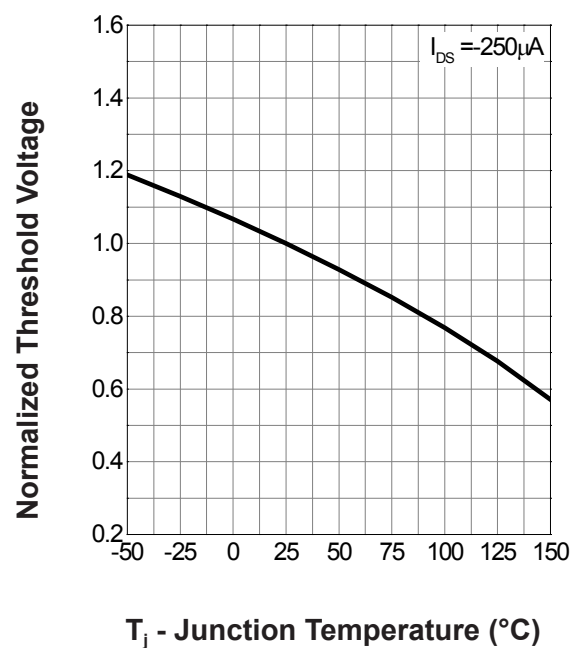
Note d : Pulse test ; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Note e : Guaranteed by design, not subject to production testing.

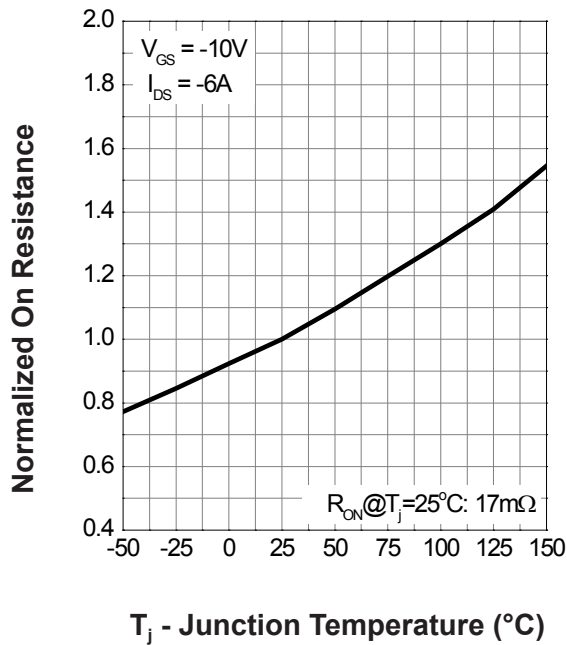
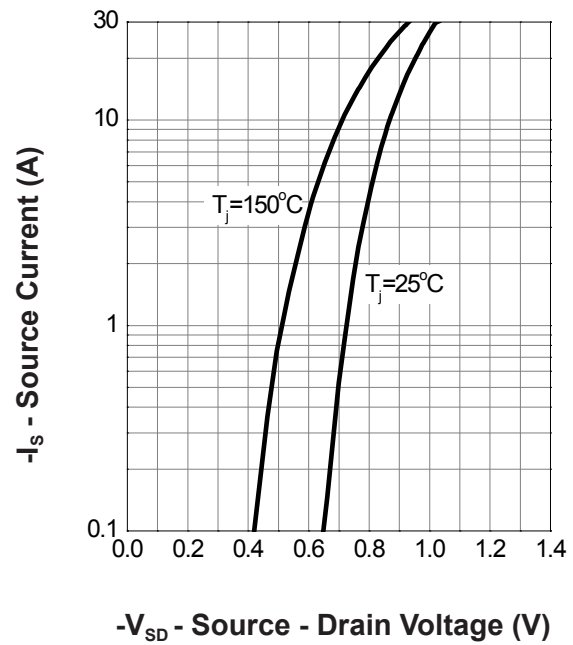
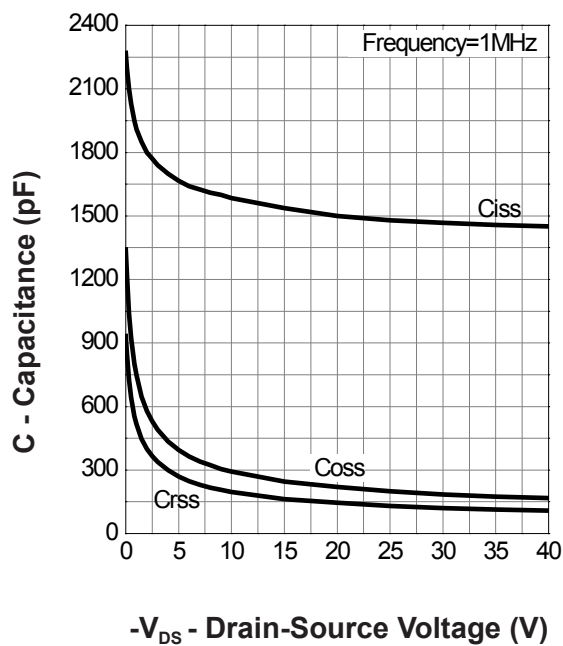
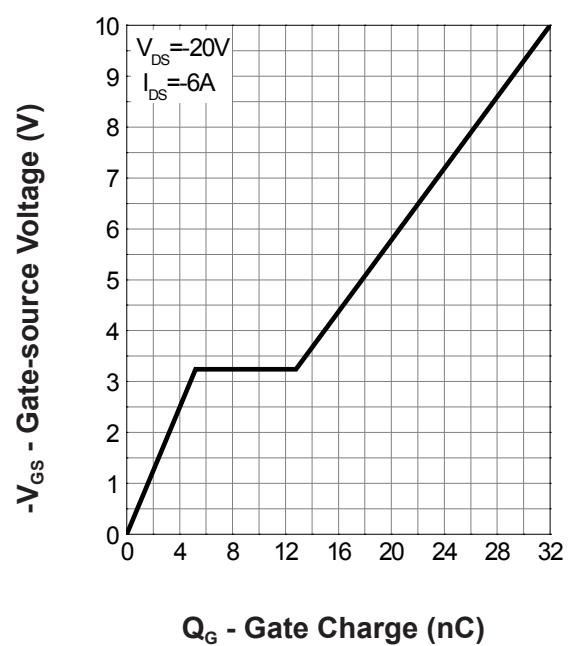
Typical Operating Characteristics

Power Dissipation

Drain Current

Safe Operation Area

Thermal Transient Impedance


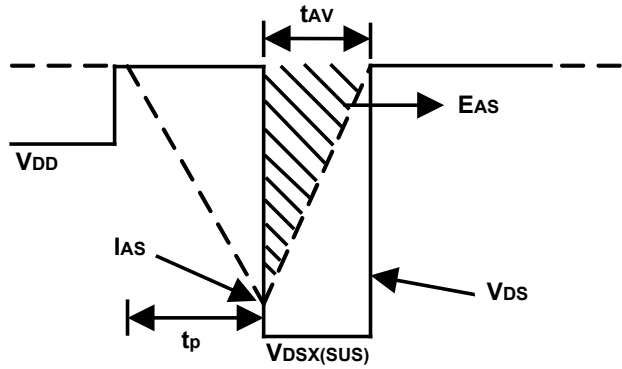
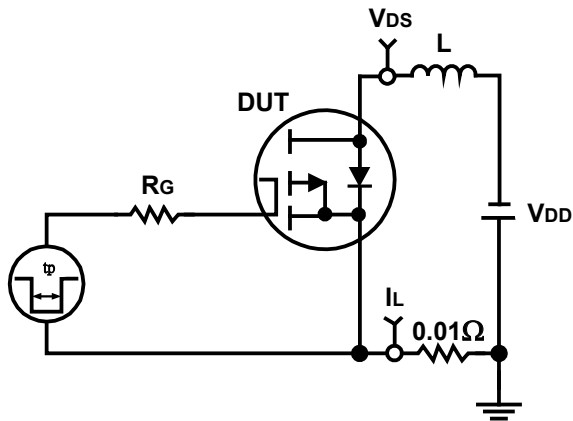
Typical Operating Characteristics(Cont.)

Output Characteristics

Drain-Source On Resistance

Gate-Source On Resistance

Gate Threshold Voltage


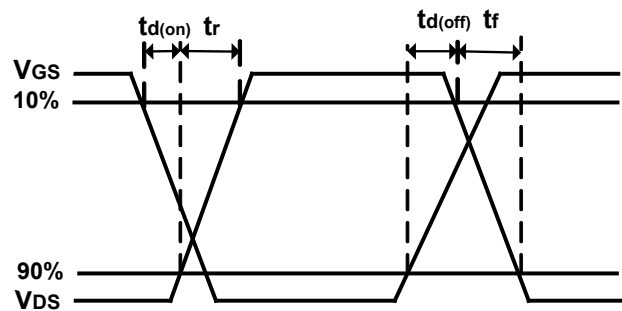
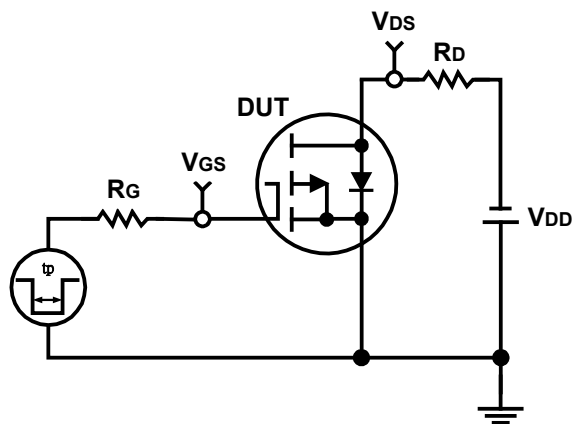
Typical Operating Characteristics(Cont.)

Drain-Source On Resistance

Source-Drain Diode Forward

Capacitance

Gate Charge


Avalanche Test Circuit and Waveforms

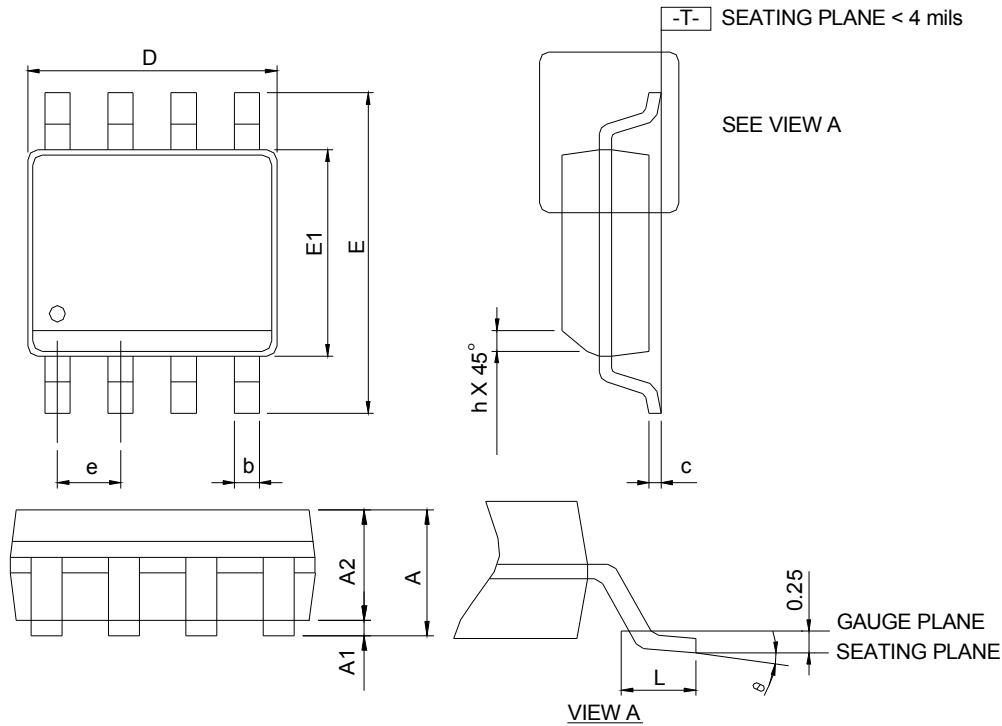


Switching Time Test Circuit and Waveforms



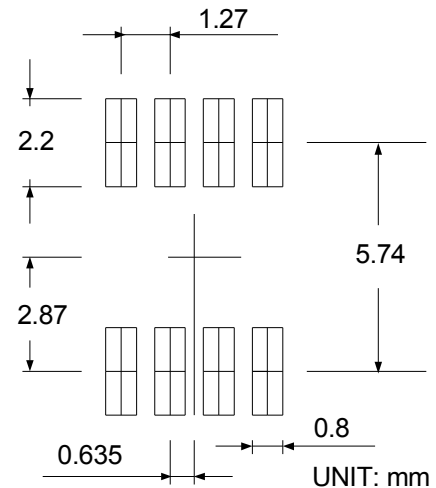
Package Information

SOP8



DIMENSIONS	SOP8			
	MILLIMETERS		INCHES	
	MIN.	MAX.	MIN.	MAX.
A		1.75		0.069
A1	0.10	0.25	0.004	0.010
A2	1.25		0.049	
b	0.31	0.51	0.012	0.020
c	0.17	0.25	0.007	0.010
D	4.80	5.00	0.189	0.197
E	5.80	6.20	0.228	0.244
E1	3.80	4.00	0.150	0.157
e	1.27 BSC		0.050 BSC	
h	0.25	0.50	0.010	0.020
L	0.40	1.27	0.016	0.050
θ	0°	8°	0°	8°

RECOMMENDED LAND PATTERN



- Note: 1. Follow JEDEC MS-012 AA.
2. Dimension "D" does not include mold flash, protrusions or gate burrs. Mold flash, protrusion or gate burrs shall not exceed 6 mil per side.
3. Dimension "E" does not include inter-lead flash or protrusions. Inter-lead flash and protrusions shall not exceed 10 mil per side.